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EXAMINER


MURPHY, RHONDA L

ART UNIT PAPER NUMBER

2667

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/893,363	Applicant(s)  HUO, DAVID	
	Examiner Rhonda Murphy	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/13/02</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 6, 14, 22 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. A description for the More bit (M) field is required in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 25, 28 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by 3rd Generation Partnership Project (3GPP) - Technical Specification Group Radio Access Network (Release 1999).

Regarding claims 25 and 30, The 3GPP teaches a Radio Link Control block comprising: a plurality of Logical Link Control Service Data Unit (SDU) and a data block

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header that includes a delimiter as a length indicator (page 12, 3rd paragraph; several SDUs fit into one PDU and the length indicators are inserted into the beginning of the PDU. The RLC PDU described in the reference represents the RLC data block in the instant application and the SDUs described in the reference represents the PDUs in the instant application) wherein any last SDU of the Radio Link Control data block has no delimiter (page 24, paragraph 1; there is no LI that indicates the end of the SDU) and when a last Logical Link Control SDU fills the balance of the Radio Link Control data block, the length indicator is zero for first length indicator in any next sequence Radio Link Control block (page 24, paragraph 1; the end of the last segment of an SDU exactly ends at the end of a PDU...the length indicator shall be placed as the first length indicator in the following PDU and have a value LI=0).

Regarding claim 28, 3GPP further teaches a data block header including an extension bit (E) field to indicate the presence of an optional octet in data block header (page 23, section 9.2.2.5; see Figure 9.3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 5, 7-9, 13, 15-17, 21, 23-24, 31-34, 36-40, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP in view of Jiang (US 6,687,248).

Regarding claims 1 and 17, 3GPP teaches the same limitations as described above in claims 25 and 30. 3GPP fails to explicitly disclose the telecommunication devices utilized in within the telecommunications system.

However, Jiang teaches a telecommunications system comprising: a telecommunications network device (Fig. 1, base station 10) having a radio interface (it would be obvious to include a radio interface in wireless communication systems) and a layered protocol architecture for allowing transfer of upper layer Protocol Data units using a shared medium between a communications unit and the telecommunications network device (Fig. 1, base station 10 and mobile unit 20; layers 1-3; col. 1, lines 14-45), wherein said layered protocol architecture is operative for coding and transferring Protocol Data Units as a plurality of Radio Link Control data blocks (col. 1, lines 14-60).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, by including the telecommunication devices to perform the functions associated with transmitting data using RLC data blocks.

Regarding claims 5, 13 and 21, 3GPP further teaches a data block header including an extension bit (E) field to indicate the presence of an optional octet in data block header (page 23, section 9.2.2.5; see Figure 9.3).

Regarding claims 7, 15, 23, 34 and 40, 3GPP teaches a communication system, but fails to explicitly teach a mobile unit. However, Jiang teaches a communication unit comprising at least one mobile unit (Fig. 1, mobile unit 20).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, by including a mobile unit, in order to receive data blocks from a network device.

Regarding claims 8, 16, 24, 33 and 39, 3GPP teaches a communication system, but fails to explicitly teach a base station. However, Jiang teaches a telecommunications network device comprising a base station (Fig. 1, base station 10).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, by including a base station, in order to transmit data blocks to a communications unit.

Regarding claim 9, 3GPP and Jiang teach the same limitations as described above in claims 1 and 17. Additionally, 3GPP teaches a plurality of RLC data blocks each containing octets numbered from 1 to N (Figs. 9.2 and 9.3, page 20) and each carrying a plurality of Logical Link Control Protocol Data Units (LLC PDU) having user data or upper layers' signaling data (Fig. 9.2 and 9.3 illustrate the PDUs containing user data); a data block header that includes a delimiter as a length indicator given in an octet (page 12, paragraph 3; and page 23, section 9.2.2.8; several SDUs fit into one PDU and the length indicators are inserted into the beginning of the PDU; Figure 9.2 and 9.3 show the length indicators in an octet). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system

of 3GPP and Jiang to include a plurality of telecommunication network devices and communication units, in order to provide service connections to multiple users.

Regarding claims 31, 37 and 43, 3GPP and Jiang teach the same limitations as described above in claims 1 and 17. Additionally, Jiang teaches a layered protocol architecture with at least an upper layer and lower layer (Fig. 1, layers 1-3); and a plurality of upper layer Protocol Data Units delimited into a lower layer protocol payload (col. 1, lines 27-34).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, by delimiting upper layer PDUs into a lower layer protocol payload, in order to transmit data blocks between devices in the most efficient method.

Regarding claims 32 and 38, It would have been obvious to one having ordinary skill in the art at the time the invention was made, to include a radio interface as the interface of the telecommunications network device, since wireless communication systems utilize radio interfaces as a communication means between devices.

Regarding claims 36, 42 and 44, 3GPP teaches a layered architecture, but fails to disclose contiguous layers. However, Jiang teaches contiguous upper and lower layers within the layered architecture (Fig. 1, layers 1-3; col. 1, 27-34).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, by including contiguous upper and lower layers, so as to directly transfer data between the layers.

7. Claims 2, 10, 18, 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP and Jiang as applied to claim 1 above, and further in view of Lee et al. (US 2002/0001296).

Regarding claims 2, 10, 18, 35 and 41, 3GPP teaches at least one packet data physical channel through which Protocol Data Units are transferred (page 10, section 4.2.1.1). 3GPP fails to explicitly disclose a radio resource sub-layer.

However, Lee teaches a layered protocol architecture (Fig. 8) comprising a radio resource sub-layer (Fig. 8, RRC protocol) for managing the at least one packet data physical channel (Fig. 8, PDSCH) and managing Radio Link Control and Medium Access Control on the packet data physical channels (page 5, paragraphs 87-88).

8. Claims 3-4, 6, 11-12, 14, 19-20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP and Jiang as applied to claim 1 above, and further in view of Ravishankar et al. (US 6,778,509).

Regarding claims 3, 11 and 19, 3GPP teaches an RLC data block comprising a header. 3GPP fails to disclose a final block indicator in a data block header.

However, Ravishankar teaches a data block header including a final block indicator (FBI) field to indicate whether the Radio Link Control data block is the last data block of a Temporary Block Flow (Fig. 7A, FBI 701g).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, to include a final block indicator in order to determine the final block of the data being transferred.

Regarding claims 4, 12 and 20, 3GPP fails to explicitly teach a downlink Radio Link Control data block. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to include a downlink RLC data block, in order to transmit data across a radio interface in a downlink channel, from one wireless device to another.

Regarding claims 6, 14 and 22, 3GPP teaches an RLC data block comprising a header. 3GPP fails to disclose a More bit (M) field in a data block header.

However, Ravishankar teaches a data block header including a More bit (M) field to indicate when another Logical Link Control Protocol Data Unit follows the current one within a Radio Link Control data block (Fig. 7B, CV 703f; col. 12, lines 18-21).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, to include a More bit field in order to indicate whether more data blocks are pending.

9. Claims 26, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP, in view of Ravishankar et al. (US 6,778,509).

Regarding claim 26, 3GPP teaches an RLC data block comprising a header. 3GPP fails to disclose a final block indicator in a data block header.

However, Ravishankar teaches a data block header including a final block indicator (FBI) field to indicate whether the Radio Link Control data block is the last data block of a Temporary Block Flow (Fig. 7A, FBI 701g).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, to include a final block indicator in order to determine the final block of the data being transferred.

Regarding claim 27, 3GPP fails to explicitly teach a downlink Radio Link Control data block. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to include a downlink RLC data block, in order to transmit data across a radio interface in a downlink channel, from one wireless device to another.

Regarding claim 29, 3GPP teaches an RLC data block comprising a header. 3GPP fails to disclose a More bit (M) field in a data block header.

However, Ravishankar teaches a data block header including a More bit (M) field to indicate when another Logical Link Control Protocol Data Unit follows the current one within a Radio Link Control data block (Fig. 7B, CV 703f; col. 12, lines 18-21).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of 3GPP, to include a More bit field in order to indicate whether more data blocks are pending.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Yi et al. (US Pub 2002/0024972) discloses a method for inserting length indicator in protocol data unit of radio link control.

*Jiang et al. (US 6,765,885) discloses the determination of acceptable sequence number ranges in a communication protocol.

*Rinchuso et al. (US Pub 2004/0196861) discloses a packet data transmission within a broadband communication system.

*Rathonyi et al. (US 6,359,877) discloses a method and apparatus for minimizing overhead in a communication system.

*Malomsoky et al. (US Pub 2002/0196760) discloses handling TCP protocol for connections transmitted in parallel over radio link.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rlm



KENNETH VANDERPUYE
PRIMARY EXAMINER